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OFFICE OF FINANCE  
 REFUND BRANCH  
 IN THE UNITED STATES PATENT AND TRADEMARK OFFICE STATUS AND ENTITY  
 BRANCH

In re Patent Application of:

Sam-Chul HA et al.

Serial No.: 09/894,034

Filed: June 28, 2001

For: CONTINUOUS PROCESSING APPARATUS BY PLASMA POLYMERIZATION  
 WITH VERTICAL CHAMBER

2004 APR 21 PM 1:30

Date: April 14, 2004 2004 APR 20 AM 11:52

US PATENT & TRADEMARK  
 OFFICE Group Art Unit: 1763

Examiner: Thi D. Dang

Commissioner for Patents  
 P.O. Box 1450  
 Alexandria, Virginia 22214-1450Attention: Refund Section  
Accounting Division - Office of FinanceREQUEST FOR REFUND PURSUANT TO 37 C.F.R. § 1.26

Sir:

On November 20, 2003 we filed a Response to an Office Action mailed May 20, 2003 in regard to the above-captioned application (copy attached). On February 17, 2004 the Patent Office applied to our Deposit Account No. 15-0700, a charge of \$950.00 for a three month extension of time.

There is no basis for the \$950.00 charge for an extension fee. An Amendment and an Extension of Time (with a check for \$950.00 (cancelled copy enclosed), was mailed to the Commissioner for Patents on November 20, 2003 in response to an Office Action dated May 20, 2003.

Since the Extension of Time and a check in the amount of \$950.00 was submitted, the Patent Office is requested to refund \$950.00 to our Deposit Account No. 15-0700.

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450, Attn: Refund Section, Accounting Division - Office of Finance, on April 15, 2004.

Respectfully submitted,

Max Moskowitz

Registration No.: 30,576

OSTROLENK, FABER, GERB &amp; SOFFEN, LLP

1180 Avenue of the Americas

New York, New York 10036-8403

Telephone: (212) 382-0700

Max Moskowitz

Name of applicant, assignee or  
 Registered Representative

Signature

April 15, 2004

Date of Signature

Ostrolenk, Faber, Gerb & Soffen, LLP

1180 Avenue of the Americas  
New York, N.Y. 10036

13308

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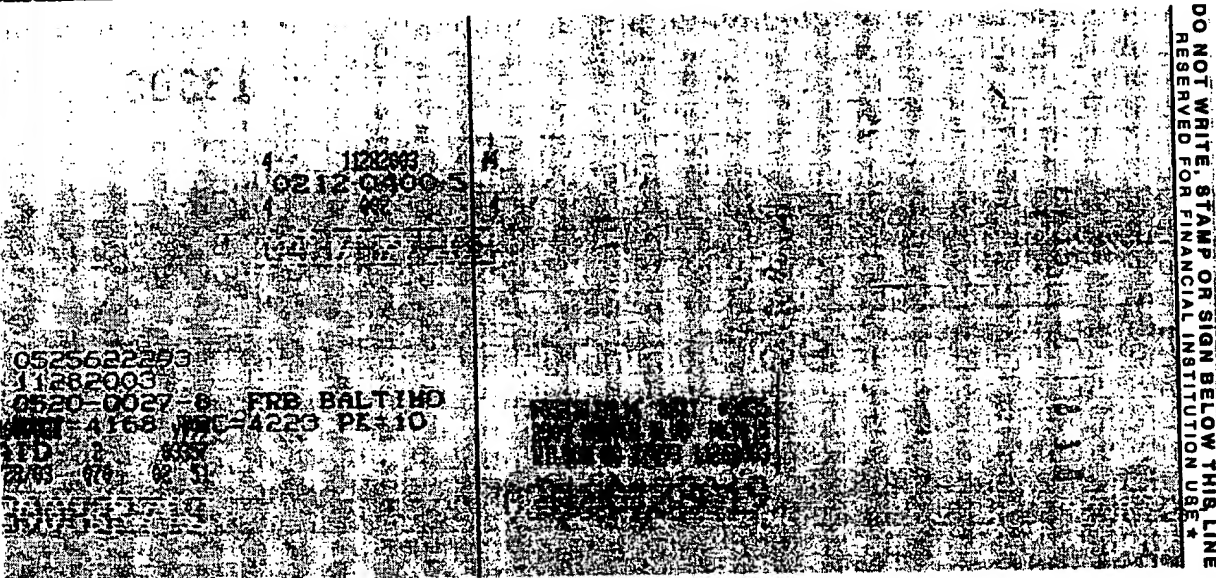
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

P/923-340  
STATUS AND ENTITY  
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In re Patent Application of

Sam-Chul HA et al

Serial No.: 09/894,340

Filed: June 28, 2001

New York, New York

Date: November 20, 2003

Group Art Unit:

Examiner: Thi D. Dang

For: CONTINUOUS PROCESSING APPARATUS BY PLASMA  
POLYMERIZATION WITH VERTICAL CHAMBER

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

PETITION AND FEE FOR AUTOMATIC EXTENSION OF TIME  
UNDER 37 CFR 1.17, 1.136(a) AND 35 USC 41(a)8

Sir:

Applicant(s) hereby petition(s) the Asst. Commissioner for Patents to extend the time for filing a response to the outstanding Office Action by one month. Enclosed is our check No. 13308 which includes the amount of \$950.00 for the petition fee in accordance with 37 CFR 1.17 computed as:

☒ Response within third month      ☒ not small entity (\$950)

You are authorized to charge to our Deposit Account No. 15-0700 any additional amounts owing.

If this petition is inadequate to avoid abandonment, the Assistant Commissioner for Patents is petitioned, under 37 C.F.R. §1.136(a), to extend the time by the number of months which will avoid abandonment under 37 C.F.R. §1.135. The fee under 37 C.F.R. § 1.17 should be charged to our Deposit Account No. 15-0700.

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on November 20, 2003

Kourosh Salehi

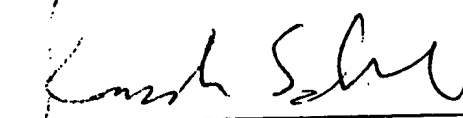
Name of applicant, assignee or  
Registered Representative

Signature

November 20, 2003

Date of Signature

Respectfully submitted,



Kourosh Salehi

Registration No.: 43,898

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

P/923-340  
STATUS AND ENTITY  
BRANCH

In re Patent Application of

New York, New York

Sam-Chul HA et al

Date: November 20, 2003

Serial No.: 09/894,340<sup>034</sup>

Group Art Unit:

Filed: June 28, 2001

Examiner: Thi D. Dang

For: CONTINUOUS PROCESSING APPARATUS BY PLASMA  
POLYMERIZATION WITH VERTICAL CHAMBER

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Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

AMENDMENT/SUBMISSION

Sir:

This is a response to the Office Action mailed May 20, 2003 in the above-identified application. Reconsideration of the application is respectfully requested.

FEE CALCULATION

Any additional fee required has been calculated as follows:

☐ If checked, "Small Entity" status is claimed.

	NO. CLAIMS AFTER AMENDMENT		HIGHEST NO. PREVIOUSLY PAID FOR		EXTRA PRESENT		RATE	ADDIT. FEE
TOTAL	15	MINUS	27	* =	0	X	(\$9 SE or \$18)	\$0
INDEP.	4	MINUS	8	** =	0	X	(\$43 SE or \$86)	\$0
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM						X	(\$145 SE or \$290)	\$0

\* not less than 20

\*\* not less than 3

TOTAL \$ 0

If any additional payment is required, a check which includes the calculated fee of \$  
\_\_\_ (OFGS Check No. \_\_\_) is attached.

In the event the actual fee is greater than the payment submitted or is inadvertently not enclosed or if any additional fee during the prosecution of this application is not paid, the Patent Office is authorized to charge the underpayment to Deposit Account No. 15-0700.

**CONTINGENT EXTENSION REQUEST**

STATUS AND ENTITY  
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If this communication is filed after the shortened statutory time period had elapsed and no separate Petition is enclosed, the Commissioner of Patents and Trademarks is petitioned, under 37 C.F.R. § 1.136(a), to extend the time for filing a response to the outstanding Office Action by the number of months which will avoid abandonment under 37 C.F.R. § 1.135. The fee under 37 C.F.R. § 1.17 should be charged to our Deposit Account No. 15-0700.

**SUMMARY OF AMENDMENTS**

1. ☐ If checked, an abstract (an amended abstract) is submitted herewith.
2. ☐ If checked, amendment(s) to the drawings are submitted herewith.
3. ☐ If checked, amendment(s) to the specification are submitted herewith.
4. ☒ If checked, amendment(s) to the claims are submitted herewith.

## LISTING OF THE CLAIMS

STATUS AND ENTRY  
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This listing of claims will replace all prior versions, and listings, of claims in the application:

2004 APR 20 AM 11: 52

1. (Currently Amended) A continuous processing apparatus for plasma polymerization, the apparatus having a plurality of chambers to perform a surface processing by plasma polymerization on a surface of a substance being moved into a chamber, the apparatus comprising:

at least one vertical chamber which includes a chamber body with one side thereof being opened in which a substance is moved vertically, a chamber door combined to the opened side of the chamber body; and at least one electrode disposed in parallel to the movement direction of the substance,

wherein the electrode is disposed in the chamber body or at the chamber door, and  
~~at least one vertical chamber in which the substance is vertically moved and at least one electrode included therein;~~

wherein the vertical chamber includes substance pass holes formed at the upper and lower first and second sides thereof and/or at the top and bottom sides thereof.

2. (Canceled)

3. (Currently Amended) The apparatus of claim [[2]] 1, wherein the chamber includes a plurality of electrodes, each being disposed in a line in parallel to the movement direction of a substance in the chamber.

4. (Original) The apparatus of claim 1, wherein the vertical chamber is a polymerization chamber in which the surface of a substance is processed by plasma polymerization.

5. - 6. (Canceled)



7. (Currently Amended) The apparatus of claim 1, A continuous processing  
apparatus by plasma polymerization, the apparatus having a plurality of chambers to perform a  
surface processing by plasma polymerization on a surface of the substance being moved into a  
chamber, comprising:

— at least one vertical chamber in which a substance is vertically moved and at least one  
electrode included therein;

wherein as power is applied to the substance, the substance itself is used as an electrode.

8. - 10. (Canceled)

11. (Currently Amended) The apparatus of claim 1, A continuous processing  
apparatus by plasma polymerization, the apparatus having a plurality of chambers to perform a  
surface processing by plasma polymerization on a surface of a substance being moved into a  
chamber, comprising:

— at least one vertical chamber in which the substance is vertically moved and at least one  
electrode included therein;

wherein the vertical chamber includes a partition plate at the center thereof, so that the  
vertical chamber is divided into two vertical areas by the partition plate.

12. (Original) The apparatus of claim 11, wherein the movement direction of a  
substance is the opposite to each other in the two vertical areas.

13. (Original) The apparatus of claim 11, wherein the two vertical areas includes at  
least one electrode disposed in parallel to the movement direction of the substance, respectively.

14. (Currently Amended) A continuous processing apparatus by plasma  
polymerization with a vertical chamber in which a plurality of chambers are provided to perform  
a surface processing by plasma polymerization on the surface of a substance being moved into a  
chamber, comprises:

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a first vertical chamber in which a substance is moved vertically, having at least one electrode; [[and]]

a second vertical chamber in which a substance is moved vertically, having at least one electrode and being disposed spaced apart with a certain interval from the first vertical chamber;  
and

a horizontal chamber arranged in the interval between the first chamber and the second chamber, whereby the substance is moved horizontally,

wherein the horizontal chamber comprises:

a chamber body having a pass hole formed at the left and the right sides thereof so that the substance can pass therethrough;

an upper door having an electrode at the inner side thereof and being opened and closed upwardly; and

a lower door having an electrode at the inner side thereof and being opened and closed downwardly.

15. (Original) The apparatus of claim 14, wherein at least one of the first and the second vertical chambers is a polymerization chamber in which a substance is surface-processed by plasma polymerization.

16. (Canceled)

17. (Currently Amended) The apparatus of claim [[16]] 15, wherein if the second vertical chamber is a polymerization chamber, one of the remaining chambers is a pre-processing chamber in which the surface of the substance is cleaned before being polymerized.

18. (Currently Amended) The apparatus of claim [[16]] 15, wherein if the first vertical chamber is a polymerization chamber, one of the remaining chambers is a post-processing chamber in which air is injected therein and post-processing is performed by plasma discharging.

19. (Canceled)

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20. (Original) The apparatus of claim 15, wherein the first and the second vertical chambers are polymerization chamber having the same conditions at least one out of a kind of a gas supplied to the chamber, a supply rate of gases, a range of voltage applied to the electrode and the pressure inside the chamber.

21. (Currently Amended) A continuous processing apparatus for plasma polymerization with a vertical chamber, the apparatus comprising:

an unwinding chamber having an unwinding roll for unwinding a substance wound thereon,

a winding chamber having a winding roll for winding a surface-processed substance,

a polymerization chamber in which the substance is surface-processed by plasma discharging after being conveyed from the unwinding chamber, the substance being vertically movable in the polymerization chamber; [[and]]

the polymerization chamber which includes a chamber body with one side thereof being opened in which the substance is moved vertically, a chamber door combined to the opened side of the chamber body, and at least one electrode disposed in parallel to the movement direction of the substance, and

the electrode is disposed in the chamber body or at the chamber door, and the polymerization chamber includes a substance pass hole formed at the upper and the lower sides or at the top and the bottom thereof.

~~at least one electrode included in the polymerization chamber,~~

~~wherein the vertical chamber includes substance pass holes formed at first and second sides thereof and/or top and bottom sides thereof.~~

22. (Canceled)

23. (Original) The apparatus of claim 21, wherein one of the chambers comprises:  
at least one roller contacted by a substance being moved; and

a power supply unit for rendering the substance itself to become an electrode by contacting the roller as power is supplied to the roller.

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24. (Currently Amended) A continuous processing apparatus by plasma polymerization with a vertical chamber, comprises:

an unwinding chamber having an unwinding roll for unwinding a wound substance;

a winding chamber having ~~[[an]]~~ a winding roll for winding a surface-processed substance;

a first polymerization chamber for surface-processing the substance conveyed from the unwinding chamber by plasma discharging, and having substance pass hole formed at an upper side and a lower side ~~[[sides]]~~ and at least one electrode therein;

a second polymerization chamber for surface-processing the substance conveyed from the unwinding chamber by plasma discharging, and having substance pass hole formed at an upper side and a lower side ~~[[sides]]~~ and at least one electrode therein;

wherein the movement direction of the substance is opposite in the first and the second polymerization chamber,

the first and second polymerization chambers are an integrated chamber comprising a chamber body having a partition plate at the center thereof and an electrode disposed at both sides of the partition, and being opened at the left and right side, and first and second doors having an electrode disposed in parallel to the movement direction of the substance at the inner side thereof, and opening and closing the left and the right side of the chamber body.

25. - 27. (Canceled)

**REMARKS/ARGUMENTS**

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2004 APR 20 AM 11: 52

Applicant responds herein to the Office Action dated May 20, 2003. A Petition for Extension of Time (three months) and the fee therefor are enclosed.

Claims 1-4 and 7-27 are being rejected as disclosed or easily conceivable from Sando, et al. (4,437,324), Kashiwaya, et al. (5,595,792), Edgerton (4,389,970) and Goffetre, et al. (5,196,100).

Claim 1 has been amended to include the limitations of claims 8 and 10. Similarly, claim 14 has been amended to include the limitations of claims 16 and 19, claim 21 has been amended to include the limitations of claims 20, 9 and 10, and claim 24 has been amended to include the limitations of claims 25 and 27. Reconsideration in view of the amendments to the claims is requested.

As amended, claims 1, 14, 21 and 24 include the chamber door and the chamber body, and the disposition of electrode in relation with the chamber body and the chamber door as characteristic features of the claimed invention.

Regarding the rejections under U.S.C. §102, it is respectfully submitted that none of the cited references by itself discloses a combination that includes a chamber door and a chamber body as claimed. Therefore, none of the cited references anticipates claim 1, claim 14, claim 21, or claim 24. Reconsideration is requested.

Regarding the rejections under 35 U.S.C. §103(a), it has been set forth that Goffetre, et al. teach the use of pivoting doors supporting electrodes parallel to the substance movement direction in a vertical deposition chamber for the purpose of providing operators with access to the electrodes when necessary.

However, the shape of the electrode and the disposition of the electrode in relation with the chamber body and the chamber door according to the present invention are different from those shown by Goffetre, et al. That is, according to the present invention an electrode with a shape of a plate is attached in the chamber body or at the chamber door so that only one face thereof (the opposite face of the substrate) participates in plasma discharging, thus preventing the generation of carbide on the other face due to the polymerization material.

Accordingly, it is clear that the apparatus according to the present invention can effectively reduce the amount of carbide released from the electrode which can fall and damage the surface of a substance. This result cannot be accomplished by Goffetre, et al. STATUS AND ENTITY  
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2004 APR 20 AM 11: 52

In conclusion, the present invention as a whole is clearly distinguished from Sando, et al. (4,437,324), Kashiwaya, et al. (5,595,792), Edgerton (4,389,970) and Goffetre, et al., and cannot be foreseen in view of the cited references. Reconsideration is, therefore, requested.

Each of the remaining claims depends from one of claims 1, 14 and 21, and, therefore, includes at least the limitations of its base claim. Each of these claims includes other limitations, which in combination with those of its base claims are not shown or suggested by the art of record. Reconsideration is requested.

The application is believed to be in condition for allowance. Such action is earnestly solicited.

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Kourosh Salehi

Name of applicant, assignee or  
Registered Representative

Signature

November 20, 2003

Date of Signature

Respectfully submitted

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